

James A. Lederer, PhD

Associate Professor, Department of Surgery, Brigham and Women's Hospital (BWH) and Harvard Medical School

Director, BWH Trauma Immunology Research Program and Harvard Medical Area (HMA) CyTOF Technology Resource and Antibody Core

Member of the BWH Stepping Strong Center for Trauma Innovation (SSCTI) and Biomedical Research Institute (BRI)

**Brief Bio**

James Lederer received his PhD from the University of Wisconsin–Madison in 1991 in microbiology and immunology. He then moved to Boston to train as a research fellow in basic cellular immunology with Drs. Andrew Lichtman and Abul Abbas in the Department of Pathology at the Brigham and Women's Hospital from 1991-1995. He joined the Department of Surgery in 1995 to develop a new research program built upon using fundamental immunology approaches to study the immune response to trauma. His research program has been instrumental in establishing the Trauma Immunology research field by contributing to the basic understanding of how trauma and radiation injuries activate, modulate, and influence the immune system and immunity. His group has also developed strategies that use innate immune modulators such as CpG-DNA that are known to stimulate trained immunity as medical countermeasures for trauma, radiation, and sepsis in immune compromised individuals. He is strong advocate for using “dirty” or “natural” mouse models mouse models to gain new insights into human disease mechanisms and for translational immunology research. His other research efforts use innovative systems immunology approaches like mass cytometry (CyTOF), RNA sequencing, and multiplex cytokine technology to study the cells and mediators of injury, radiation, infection, autoimmune, and tumor immune responses. The Lederer Lab actively collaborates on using CyTOF, RNA sequencing, and immune receptor profiling as systems immunology tools to study diverse human and mouse disease responses.

Statement of Interest

My scientific interest in immunology and inflammation biology began with my PhD thesis research program at the University of Wisconsin–Madison studying species specificity of interleukin-1 (IL-1) and IL-1 receptors. I was first introduced to the Society for Leukocyte Biology (SLB) by my mentor, Charles Czuprynski, an expert in host responses to bacterial infections and neutrophil biology. In fact, the annual SLB meeting was my first immunology research meeting I attended. I was inspired by the inflammation biology research that was being presented by many leaders in the field during my training years. I have remained an active SLB member and have gained many insights that have shaped my research from attending the meetings. When I joined the Department of Surgery at Brigham and Women's Hospital (BWH), I was introduced to the idea that traumatic injury has dramatic effects on the immune system. As these projects evolved, we presented our findings at the annual SLB meetings and received insightful feedback

from attendees that had an interest and appreciation for this unique type of immunology research. Specifically, SLB leaders like Joost Oppenheim and Liz Kovacs were supportive and provided encouragement for the immunology concepts that we applied to traumatic injury research. As such, I think that SLB is a unique scientific society because it provides an open forum for both mainstream immunology research and novel research areas that are not as well known or appreciated by the research community. This is reflected in our society journal, the Journal of Leukocyte Biology (JLB), which is a high impact publication target for research teams focused on immune function and regulation. As a councilor, I will work to assure that our society remains inclusive to both mainstream and novel types of immunology research to be part of our annual meeting and journal. I would also like to ensure that our meeting provides information to help us remain up to date with the latest technologies by having sessions dedicated to new technologies and inviting vendors to present at or sponsor our annual meeting. SLB provides multiple inclusion opportunities for trainees and junior faculty to be engaged as active members of the society through serving on committees and being involved in our meeting and/or journal. This should remain a priority. As councilor, I will be open-minded to new ideas or directions for the society as it relates to scientific policies and financial stability. Thank you for your nomination for councilor and I look forward to the opportunity to serve the SLB community.